

**From:** "Lichtveld, Maureen Y" <mlichtve@tulane.edu>  
**Sent:** 01/07/2020 6:45:45 AM (-08:00)  
**To:** "MUMFORD, Elizabeth" <[REDACTED]>; "Jonna Mazet" <jkmazet@ucdavis.edu>  
**Cc:** "David Rizzo" <dmrizzo@ucdavis.edu>; "Miller, Sally" <miller.769@osu.edu>;  
"daszak@ecohealthalliance.org" <daszak@ecohealthalliance.org>; "kevin.anderson@dhs.gov"  
<kevin.anderson@dhs.gov>; "Hermesen, Elizabeth D" <elizabeth.hermesen@merck.com>; "[REDACTED]"  
[REDACTED]; "mary\_wilson@harvard.edu" <mary\_wilson@harvard.edu>; "Hughes, James M"  
<jmhughe@emory.edu>; "Barton Behravesh, Casey (CDC/OID/NCEZID)" <dlx9@cdc.gov>; "Amy Pruden"  
<apruden@vt.edu>; "Rushton, Jonathan" <[REDACTED]>; "Mary Radford" <maradford@ucdavis.edu>;  
[REDACTED] "Wilson, Mary E." <mewilson@hsph.harvard.edu>  
**Subject:** RE: Rapid turnaround if bandwidth: Request from the Moore Foundation

Dear Jonna and happy new year to all. Given the short time frame, I have not reviewed all responses you received at this time, but do agree with Elizabeth's below. Here are some thoughts:

- If climate, severe weather events, and sub-seasonal weather variations do not comprise one of Harvey's 5 issues, then I would add that these threats significantly impact and reciprocally worsen both animal and human health
- Exposure to environmental contaminants ( chemical stressors) impact animal and human health ( e.g. food safety and security); this in turn lead to psychosocial stress ( non-chemical stressors). The cumulative impact of both these stressors on human health as a result of one health-related insults is an increasingly threat disproportionately affecting vulnerable communities

Hope this is helpful

Maureen

Maureen Y. Lichtveld, MD, MPH

Professor and Chair

Freeport McMoran Chair of Environmental Policy

Associate Director Population Sciences, Louisiana Cancer Research Consortium

Director GROWH Research Consortium

Director, Center for Gulf Coast Environmental Health Research, Leadership and Strategic Initiatives

Past President, Hispanic-Serving Health Professions Schools

Tulane University School of Public Health and Tropical Medicine

Department of Global Environmental Health Sciences

1440 Canal Street, suite 2100

New Orleans, Louisiana 70112

Tel: 504-988-7904

Fax: 504-988-1726

Email: [mlichtve@tulane.edu](mailto:mlichtve@tulane.edu)

[www.gulfcoastenvironmentalhealth.com](http://www.gulfcoastenvironmentalhealth.com)

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**From:** MUMFORD, Elizabeth <[REDACTED]>  
**Sent:** Tuesday, January 7, 2020 6:43 AM  
**To:** Jonna Mazet <jkmazet@ucdavis.edu>  
**Cc:** David Rizzo <dmrizzo@ucdavis.edu>; Miller, Sally <miller.769@osu.edu>; daszak@ecohealthalliance.org;  
kevin.anderson@dhs.gov; Hermesen, Elizabeth D <elizabeth.hermesen@merck.com> [REDACTED]  
mary\_wilson@harvard.edu; Hughes, James M <jmhughe@emory.edu>; Barton Behravesh, Casey (CDC/OID/NCEZID)  
<dlx9@cdc.gov>; Lichtveld, Maureen Y <mlichtve@tulane.edu>; Amy Pruden <apruden@vt.edu>; Rushton, Jonathan  
[REDACTED] <[REDACTED]>; Mary Radford <maradford@ucdavis.edu>; [REDACTED] Wilson,  
Mary E. <mewilson@hsph.harvard.edu>  
**Subject:** RE: Rapid turnaround if bandwidth: Request from the Moore Foundation

External Sender. Be aware of links, attachments and requests.

Here, a bit more substantive. Even though we as a group haven't really addressed inclusion of social sciences, my One Health work is moving this way in terms of improving uptake of existing and new health measures and building policy. Please feel to improve/reword (or not include).

- Effective implementation and uptake of risk reduction measures for existing and emerging health threats at the human-animal-environment interface requires a One Health approach, particularly the inclusion of social science aspects. Without understanding and considering the cultural and behavioral particularities in target populations, we as the health community will never be able to have the desired impact. Even the most scientifically-sound risk reduction measures and policies may be ineffective if socio-cultural norms are not considered in their planning and implementation.

Best

Liz

Dr Elizabeth Mumford  
Research for Health Department  
Science Division  
World Health Organization

REDACTED

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**From:** MUMFORD, Elizabeth

**Sent:** Tuesday, January 7, 2020 10:19

**To:** Wilson, Mary E. <[mewilson@hsph.harvard.edu](mailto:mewilson@hsph.harvard.edu)>

**Cc:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>; David Rizzo <[dmrizzo@ucdavis.edu](mailto:dmrizzo@ucdavis.edu)>; Miller, Sally <[miller.769@osu.edu](mailto:miller.769@osu.edu)>;  
[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org); [kevin.anderson@dhs.gov](mailto:kevin.anderson@dhs.gov); Hermesen, Elizabeth D <[elizabeth.hermesen@merck.com](mailto:elizabeth.hermesen@merck.com)>;

REDACTED <[mary\\_wilson@harvard.edu](mailto:mary_wilson@harvard.edu)>; Hughes, James M <[jmhughe@emory.edu](mailto:jmhughe@emory.edu)>; Barton Behravesh,  
Casey (CDC/OID/NCEZID) <[dlx9@cdc.gov](mailto:dlx9@cdc.gov)>; [mlichtve@tulane.edu](mailto:mlichtve@tulane.edu); Amy Pruden <[apruden@vt.edu](mailto:apruden@vt.edu)>; Rushton, Jonathan

REDACTED <[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)>; REDACTED

**Subject:** Re: Rapid turnaround if bandwidth: Request from the Moore Foundation

Hi Jonna and colleagues

I don't have anything substantive to add but perhaps somehow it would be good to mention the recent us government recognition of OH as well as the recent expansion of the group to broaden coverage of disciplines and geographic coverage.

Happy 2020 to all !

Best

Liz



On 7 Jan 2020, at 08:21, Wilson, Mary E. <[mewilson@hsph.harvard.edu](mailto:mewilson@hsph.harvard.edu)> wrote:

Thanks, Jonna – and Happy New Year all.

Here are some rough ideas in 5 areas (strongly influenced by my background and interest in infectious diseases). I also attach brief perspective piece (now published online) that links antibiotics and some of environmental consequences.

**ANTIMICROBIAL RESISTANCE** Progress on the issue of antimicrobial resistance can be achieved only through a One Health approach. Understanding drivers and developing interventions requires integrated surveillance of humans, animals (food animals, wild animals, pets), aquaculture, plants, and the environment. AMR involves soil, water, air, water treatment systems, and ecosystems. It affects all populations globally, which are now extensively linked through travel, trade, and migration. Policies that affect all three must be developed with an awareness of all populations. New technologies now allow precise tracking of origin and disposition of microbes, including bacteria, viruses, fungi, etc and resistance genes and mobile genetic elements.

**FOOD DIET LAND USE** Humans, plants, animals use ecosystem services. Land and water resources are being depleted to grow food (grain and other crops and food animals). Foodborne infections and toxins are a common cause of human illness, especially in LMIC. Decisions about food production, choices, preparation, and movement have profound effects on health and the environment and must be framed with a One Health perspective. Wild animal populations are being displaced by monocultures in ways that may put humans at increased risk for disease. An example is loss of habitat for bats which then live in areas where they have more contact with human populations and can be a source of human and animal infections.

**VECTORBORNE** infections contribute to disease and death in humans, animals. Plants are also affected by vectorborne infections (e.g, whitefly-transmitted infections) and can affect food security. Many mosquito, ticks, and other vectors have specific habitats and temperature, humidity, and ecological requirements. Clearing land, building new roadways, altering habitat for animals that may serve as reservoir or amplifying hosts, can affect abundance, biting behavior, and likelihood of transmission events. Animal hosts and reservoirs are part of the ecology of many VB infections and must be mapped and understood in order to control many VB diseases. Climate change/extreme weather events affect vector distribution, abundance, biting activity as well as presence and abundance of reservoir hosts. Requires intimate knowledge of environment, ecology, vectors, human activity and movement, and animal hosts. Many vectors and vectorborne infections are changing in distribution.

**EMERGING INFECTIONS** Must monitor animals (wild animals and food animals) and humans with focus on hot spots with large interface between human and animal populations, high population densities, ecological change. Understanding of migration/travel patterns and network connections important.

**EDUCATION AND TRAINING MUST BE INFUSED WITH ONE HEALTH PERSPECTIVE.** Must break down the silos between human, animal, and environmental sciences. Lens of One Health essential in making policy decisions about health, environment, food systems, etc.

Will be interested to see final document. Thanks for doing this!

Best,  
Mary

**Mary E. Wilson, MD**, Clinical Professor of Epidemiology and Biostatistics, School of Medicine, University of California, San Francisco; Adjunct Professor of Global Health and Population, Harvard T.H. Chan School of Public Health, Boston, Massachusetts

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**From:** Jonna Mazet <[jkmazet@ucdavis.edu](mailto:jkmazet@ucdavis.edu)>

**Date:** Monday, January 6, 2020 at 7:30 PM

**To:** David Rizzo <[dmrizzo@ucdavis.edu](mailto:dmrizzo@ucdavis.edu)>, "Miller, Sally" <[miller.769@osu.edu](mailto:miller.769@osu.edu)>, "[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)" <[daszak@ecohealthalliance.org](mailto:daszak@ecohealthalliance.org)>, "[kevin.anderson@dhs.gov](mailto:kevin.anderson@dhs.gov)" <[kevin.anderson@dhs.gov](mailto:kevin.anderson@dhs.gov)>, "Hermesen, Elizabeth D" <[elizabeth.hermesen@merck.com](mailto:elizabeth.hermesen@merck.com)>, "Wilson, Mary E." <[mewilson@hsph.harvard.edu](mailto:mewilson@hsph.harvard.edu)>, "REDACTED" <[mary\\_wilson@harvard.edu](mailto:mary_wilson@harvard.edu)> <[mary\\_wilson@harvard.edu](mailto:mary_wilson@harvard.edu)>, "[JMHUGHE@emory.edu](mailto:JMHUGHE@emory.edu)" <[jmhughe@emory.edu](mailto:jmhughe@emory.edu)>, "Barton Behravesh, Casey (CDC/OID/NCEZID)" <[dlx9@cdc.gov](mailto:dlx9@cdc.gov)>, "[mlichtve@tulane.edu](mailto:mlichtve@tulane.edu)" <[mlichtve@tulane.edu](mailto:mlichtve@tulane.edu)>, "MUMFORD, Elizabeth" <[REDACTED](mailto:REDACTED)>, Amy Pruden <[apruden@vt.edu](mailto:apruden@vt.edu)>, "Rushton, Jonathan" <[REDACTED](mailto:REDACTED)>, "Cc: Mary Radford <[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)>, "REDACTED" <[REDACTED](mailto:REDACTED)>"  
**Subject:** Rapid turnaround if bandwidth: Request from the Moore Foundation

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Dear OHAC Team,

I received the request below from the Harvey Fineberg, President of the Gordon & Betty Moore Foundation, over the holidays. It is quite an honor and testament to the good work that has been commencing to have the Foundation express interest in One Health. Caution: there are no guarantees that anything regarding their priorities will go beyond this brainstorming stage, and I would prefer that your discussions and actions not go beyond this group. He has requested a foresight memo for the Foundation on One Health by the end of this week. Harvey and I did go back and forth a bit regarding getting a few more days to prepare. Unfortunately, they have an important meeting early next week, so if we want to have One Health considered, we'll need to respond now. I didn't want to interrupt your holidays, and [REDACTED] in my office has agreed to help me draft the 2-3 page foresight memo on One Health as requested. We've started discussing a few ideas and can fulfill the request adequately, but in the spirit of One Health, wanted to make sure that we are inclusive and capturing the brilliance you have to share through collaboration.

So our request to you if you have time, recognizing everybody is coming back to a heavy workload, is for just a **few bullets** for us to try to incorporate into the message and to help us to make sure that the memo is comprehensive and capturing the most pressing One Health needs (only 5 of which should be included in the final, based on the direction below). Bulleted thoughts from you that would be useful if you could provide by **tomorrow** for consideration include: **1) prose beyond the standard wording about why One Health is needed, important, and achievable and 2) the most important frontier issues that can result in measurable effects.**

Thank you in advance if you have thoughts. Wording can be cleaned-up on our end, so please don't spend a bunch of time on that. Also, completely understand that other priorities must take precedent for most of you over the next couple of days.

Happy New Year,  
Jonna

Jonna AK Mazet, DVM, MPVM, PhD  
Professor of Epidemiology & Disease Ecology  
Executive Director, One Health Institute  
Director, One Health Workforce – Next Generation of USAID Emerging Threats Division  
Director Emeritus, PREDICT Project of USAID Emerging Threats Division

School of Veterinary Medicine  
University of California, Davis  
[onehealthinstitute.net](http://onehealthinstitute.net)

Institute for Global Health Sciences  
University of California, San Francisco  
<https://globalhealthsciences.ucsf.edu/>



For scheduling and logistical issues, please contact:  
Ms. Mary Radford  
[maradford@ucdavis.edu](mailto:maradford@ucdavis.edu)  
+1-530-752-3630

----- Forwarded message -----

From: **Harvey V. Fineberg**  
Date: Mon, Dec 23, 2019 at 1:58 PM  
Subject: Request from the Moore Foundation

Dear Jonna,

In hopes you may find this agreeable, I am writing with a small end-of-year assignment that would be a great help to us at the Moore Foundation.

In January, the Patient Care team at the foundation will begin to review long-term possibilities for future work. We are asking a handful of outside experts if they would be willing to prepare a brief (2-3 page) foresight document outlining their view of the most important five (plus or minus 1) frontier issues in a designated field. These are intended to be the most pressing, important (and perhaps under-recognized) issues that should be tackled over the next five years. I hope that you would agree to prepare such a foresight memo for issues related to **one health**.

At the Moore Foundation, we typically apply four filters to assess possible areas of future investment. First, is it important? Second, what specific, positive difference could we (as a private philanthropy) make? Third, are the results measurable? And finally, is there a portfolio effect, reinforcing other work we are doing. Setting aside this last criterion, you may want to keep the first three in mind as you think about identifying the most critical frontier issues and opportunities.

It would be most helpful if I could receive your "frontiers memo" by Friday, 10 January 2020. As a token of our appreciation, we would be pleased to provide a \$1,000 honorarium if you are able to submit your memo by that date.

I hope this is something you would be able to take on, as my colleagues and I are eager to see what topics you identify.

Please let me know if you have any questions and if this is something you can do for us.

Warm regards,

Harvey

Harvey V. Fineberg, MD, PhD  
President  
Gordon and Betty Moore Foundation